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(54) Title: NEWLY IDENTIFIED CHOLINEPHOSPHOTRANSFERASES AND ETHANOLAMINEPHOSPHOTRANSFERASES

(57) Abstract: The present invention relates to polypeptides comprising one or more of the amino acid motifs selected from the group consisting of a sequence with at least 80% identity to any of (a) P-L-X-D-X(35,75)-R-R-X(8)-[YF]-X(2)-R-X(6)-T (b) C-X-D-X(3)-S-G-H-T (c) H-Y-[TS]-X-D-[VI]-X(3)-[FYI]-X(6)-F-X(2)-Y-H, which transfer phosphocholine and phosphoethanolamine, nucleotide sequences coding for any of these polypeptides and nucleotide sequences complementary thereto, plasmids, vectors and a (micro)organism or cell comprising said nucleotide sequences. Furthermore, the present invention relates to processes to produce cholinephosphotransferases and ethanolaminephosphotransferases like sphingomyelin synthase, ethanolamine phosphorylceramide synthase, phosphatidylcholine:glycoprotein cholinephosphotransferase and phosphatidylcholine:glycolipid cholinephosphotransferase. The present invention also provides the application of said nucleotide sequences to influence the equilibrium reactions or to develop compounds influencing the equilibrium reactions wherein said transferases are involved and the application of said compounds in medical use. Finally, a process has been provided to isolate candidates for functional genes of a previously unidentified enzyme from a large database by isolating candidates for functional genes of a previously unidentified